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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/649,577

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Douglas A. Hawks

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07/13/2004

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EXAMINER

TRINH, MICHAEL MANH

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/649,577

Applicant(s)

HAWKS ET AL.

Examiner

Michael Trinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on May 10, 2004 Election.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

\*\*\* This office action is in response to Applicant's election filed on May 10, 2004. Claims were 9-15 were canceled. Claims 1-8 are pending.

#### ***Election/Restrictions***

1. Claims 9-15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made without traverse in Paper mailed date May 10, 2004.

\*\* Claims 9-15 were also canceled by Applicant.

#### ***Specification***

2. The specification is objected to because of the following informalities: a) In paragraph 0026, last line, the reference numeral "42" of "alloy 42" is not shown in the drawings.

#### ***Drawings***

3. The drawing Figure 6 is objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "600" has been used to designate both "packages 600..." and "input/output regions 610...". Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Glenn (6,247,229).

Glenn teaches (at Figs 2-9; col 3, line 18 to col 4; Fig 1, cols 5-6); a method for forming a package for an electrical device, the method comprising the steps of attaching a removable material 10 to a surface of a conductive material 13 (Fig 2, col 3, lines 18-67); forming isolated conductive features 24,20 within said conductive material 13 (Figs 3-4; col 4, lines 1-29); attaching encapsulant 32 to said isolated conductive features 24,20 and said removable material 10 (Fig 6, col 4, lines 48-67); and removing said removable material 10 from said conductive features 24,20 and said encapsulant 32 (Fig 7; col 5, lines 49-67). Re claim 2, wherein said forming step includes patterning a surface of said conductive material 13 with a material resistant of photoresist to an etchant and etching said conductive material 13 with said etchant (col 3, lines 54-67). Re claim 3, wherein a die attach pad 20 is formed within said conductive material 13 (Figs 3-4; col 4, lines 1-24). Re claim 4, wherein the device 28 is coupled to said die attach pad 20 (Fig 5; col 4, lines 30-41). Re claim 5, wherein an input/output portion of the device 28 is electrically coupled to said isolated conductive feature 24 (Figs 5,10, col 4, lines 35-41). Re claim 6, wherein the method further comprises the step of singulating individual packaged devices (Figs 8-9; col 6, lines 4-60).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glenn (6,247,229) taken with Wyland (6,111,199) and Weng et al (5,972,234).

Glenn teaches (at Figs 2-7; col 3, line 18 to col 4; Fig 1, cols 5-6); a method for forming a package for an electrical device as applied to claims 1-6 above.

Re claims 7-8, Glenn already teaches (at col 3, lines 20-37) the removable material comprising a plastic, polyimide, wherein a soluble plastic adhesive that is removed by dissolving in a solvent, such as acetone (col 5, lines 48-54). Claim 7 recites the removable material comprising a water soluble adhesive. Claim 8 recites removing the removable material with deionized water.

However, *Wyland et al* teach (at col 8, lines 1-10; col 7, lines 54-67) forming an adhesive resin film on a substrate, wherein polyimide, alkali-soluble resin, or water-soluble resin are alternatively used for forming the adhesive resin film. Weng teaches (at col 5, lines 34-37, 27-51) removing the removable adhesive material with deionized water (as a pure water).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the removable material of Glenn by also using water-soluble resin (a water soluble adhesive), as taught by Wyland in the alternate. This is because the substitute art recognized equivalent removable materials, as alternative materials, is within the level of one of ordinary skill in the art, wherein water-soluble resin material, plastic, or polyimide are highly adhesive to the terminals of the lead frames, wherein, by using water soluble resin/adhesive, removing the removable materials can be easily and conveniently performed with water, and less

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expensive, wherein with the use of deionized water, as a high purity water, ion contamination of the device is prevented and thereby improving reliability and quality.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael M. Trinh whose telephone number is (571) 272-1847. The examiner can normally be reached on M-F: 8:30 Am to 5:00 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0956.

Oacs-15



Michael Trinh  
Primary Examiner